Template Name
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§63.655(h)(8) Fenceline Monitoring Report Spreadsheet Template

Welcome and Instructions

Purpose:

This spreadsheet template was designed by the U.S. EPA to facilitate fenceline monitoring reporting for Petroluem Refineries under 40 CFR part 63, subpart CC. CEDRI is accessed through the EPA's Central Data Exchange

Electronic reporting:

Electronic submission of fenceline monitoring reports through the EPA's Compliance and Emissions Data Reporting

This spreadsheet template is required to be uploaded to CEDRI to fulfill the electronic reporting requirement under §63.655(h)(8). CEDRI is accessed through the EPA's Central Data Exchange: https://cdx.epa.gov

Do not submit confidential business information (CBI) to EPA via CEDRI. If you are required to submit a report in CEDRI, you must submit the report via CEDRI with the CBI omitted and mail a complete report, including any information claimed to be CBI, to EPA on a compact disc, flash drive, or other commonly used electronic storage media via U.S. Postal Service. You must mark the outside of the digital storage media as CBI and then identify electronically within the digital storage media the specific information that is claimed as CBI. Mail the media to the address in the referencing federal regulation. If no address is specified, mail the media to:

U.S. EPA/OAQPS/CORE CBI Office Attention: Group Leader, Measurement Policy Group MD C404-02

NOTE: The CEDRI spreadsheet template upload feature allows you to submit data in a single report for a single facility or multiple facilities using this EPA provided Excel workbook. Data for each facility must be entered into the worksheet labeled "Facility Information" in this Excel workbook. Each row in the "Facility Information" worksheet For each facility record found in the "Facility Information" worksheet, you may reference a single file attachment that includes additional information. If you are uploading file attachments for your report, the uploaded files may be in any format (e.g., zip, docx, PDF). If you would like to include an Excel file(s) as an attachment, you must first zip the excel **IMPORTANT: The final CEDRI upload file must be a single ZIP file, which must include this Excel workbook and any related attachments that were referenced in the workbook (i.e., additional information file found in the "Facilty**

§63.655 Reporting and recordkeeping requirements.

(8) For fenceline monitoring systems subject to §63.658, each owner or operator shall submit the following information to the EPA's Compliance and Emissions Data Reporting Interface (CEDRI) on a quarterly basis. (CEDRI can be accessed through the EPA's Central Data Exchange (CDX) (https://cdx.epa.gov/). The first quarterly report must be submitted once the owner or operator has obtained 12 months of data. The first quarterly report must cover the period beginning on the compliance date that is specified in Table 11 of this subpart and ending on March 31, June 30, September 30 or December 31, whichever date is the first date that occurs after the owner or operator has obtained 12 months of data (i.e., the first quarterly report will contain between 12 and 15 months of data). Each subsequent quarterly report must cover one of the following reporting periods: Quarter 1 from January 1 through March 31; Quarter 2 from April 1 through June 30; Quarter 3 from July 1 through September 30; and Quarter 4 from

(i) Facility name and address.

(ii) Year and reporting quarter (i.e., Quarter 1, Quarter 2, Quarter 3, or Quarter 4).

(iii) For the first reporting period and for any reporting period in which a passive monitor is added or moved, for each passive monitor: the latitude and longitude location coordinates; the sampler name; and identification of the type of sampler (i.e., regular monitor, extra monitor, duplicate, field blank, inactive). The owner or operator shall determine the coordinates using an instrument with an accuracy of at least 3 meters. Coordinates shall be in decimal degrees with at least five decimal places.

(iv) The beginning and ending dates for each sampling period.

(v) Individual sample results for benzene reported in units of µg/m3 for each monitor for each sampling period that ends during the reporting period. Results below the method detection limit shall be flagged as below the detection limit and reported at the method detection limit.

(vi) Data flags that indicate each monitor that was skipped for the sampling period, if the owner or operator uses an alternative sampling frequency under §63.658(e)(3).

(vii) Data flags for each outlier determined in accordance with Section 9.2 of Method 325A of appendix A of this part. For each outlier, the owner or operator must submit the individual sample result of the outlier, as well as the evidence used to conclude

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The Fenceline Monitoring Program

The fenceline monitoring program requires refineries to monitor benzene emissions around their property boundary. The objective of this program is to have refineries assess the benzene monitoring data from their emissions sources such that the refinery can take appropriate actions to address the emissions from these sources in the event they exceed the benzene action level set by EPA.

The benzene monitoring data are reported to EPA electronically on a quarterly basis starting in May 2019. EPA posts the data on WebFIRE, a publicly accessible website, so the public can stay informed on the fenceline monitoring program.

Fenceline Monitoring Regulatory Requirements

40 CFR part 63 subpart CC (Refinery MACT CC) requires all refineries to implement a fenceline monitoring program for benzene emissions. The regulatory requirements of the program can be found in 40 CFR 63.658, and the reporting requirements can be found in 40 CFR 63.655(h)(8). Fenceline monitoring is required to be performed in accordance with Methods 325A and 325B of 40 CFR part 63 Appendix A.

40 CFR Part 63 Subpart CC is available here.
Methods 325A and 325B are available here.

Fenceline Monitoring Data Collection and Reporting

The fenceline monitors are passive diffusive tubes that are placed around the property boundary of the refinery. Each tube pulls a sample for a continuous two-week period. New tubes are placed on the property boundary every two weeks. Benzene concentration measurements from the two week-samples are required to be reported to EPA on a quarterly basis. The refinery is required to subtract the lowest individual monitor reading from the highest individual monitor reading for each two-week period. This result is called the benzene concentration difference (Δc) for a given two-week sample period. An annual average Δc is calculated from the most recent 26 two-week sampling periods. The annual average Δc is recalculated on a rolling basis, meaning it is updated for every two-week sample that is taken by the refinery.

Remaining consistent with EPA's practice to generally require reporting of all test data and not just values calculated from test data and/or where a facility exceeds an emission or operating limit, refineries are required to report the individual fenceline monitoring results for each two-week sampling period for each monitor. This data is submitted electronically through EPA's Compliance and Emissions Data Reporting Interface (CEDRI), which is a reporting portal on EPA's Central Data Exchange (CDX).

How the Fenceline Monitoring Data Should Be Used

The fenceline monitoring data provide refiners additional insight into their emission sources and their potential impacts, such that they can take appropriate actions to mitigate and address the emissions from these sources in the event the annual average Δc exceeds the benzene action level. Since samples are completed every two weeks, refineries may also be able to identify sources that might lead to elevated fenceline concentrations and can correct issues early, in efforts to avoid exceeding the benzene action level.

The public availability of the monitoring data provides transparency and allows for public oversight. The data are being provided to the public so that they can stay informed on the status of refinery monitoring data and emission sources and the actions a refinery is taking to address issues, as necessary.

How the Fenceline Monitoring Data Should Not Be Used

The benzene action level is not an ambient air standard. The fenceline monitors are not intended to provide a measure of benzene levels in the community. There is no correlation between the benzene action level and any health-based benzene or other hazardous air pollutant exposure standard. The benzene action level does not correlate to a benzene emissions level that presents a risk to the public. EPA did not establish the fenceline monitoring program as a risk reduction step under the Clean Air Act section 112(f)(2). Rather, the fenceline monitoring requirements are a development of practices that will provide additional information on the status of emission sources for refineries and the public. It is also important to note that the fenceline monitoring program is not an appropriate tool for monitoring and assessing emergency releases since the data from the monitors are not immediately available.

The fenceline monitors are not limited to measuring emissions from only refineries. The passive diffusive tubes may collect benzene from nearby sources that refineries do not manage, such as neighboring facilities, roadways, airports, marine ports, and from environmental events (e.g., smoke from forest fires). External emissions sources may contribute to elevated background readings that are measured by a refinery's fenceline monitors. Consequently, while this monitoring program is a reasonable means for a refinery to oversee its emission sources, there may be situations where the monitors identify benzene emissions that do not originate from the refinery.

The Benzene Action Level

The benzene action level is 9 micrograms per cubic meter ($\mu g/m^3$) for the rolling annual average Δc. Exceeding the benzene action level is not a violation of the Refinery MACT CC regulation. Rather, exceeding the action level requires the refinery to perform a root cause and corrective action analysis. While the data from an individual monitor for any 2-week sampling period may be above 9 $\mu g/m^3$ or an individual sampling period Δc value may be above 9 $\mu g/m^3$, the root cause and corrective action analysis is only required when the rolling annual average Δc is above 9 $\mu g/m^3$. It is important to note that an individual elevated value from a monitor may be the result of an upset event in the refinery, but it could also be related to a process change maintenance activity or an intermittent emission from a source external to the refinery, as discussed above. The fenceline monitoring program recognizes these possibilities and provides a mechanism to identify and address these situations.

Because the rolling annual average Δc is based on the sample results from 26 individual 2-week sample periods, the rolling annual average Δc may remain above the benzene action level even after the root cause of the action level exceedance has been addressed. In other words, one elevated sampling period Δc value may continue to affect the rolling annual average Δc for subsequent sampling periods. This does not mean the emission source that contributed to the higher Δc value is continuing, but rather that the high Δc value may impact the rolling annual average Δc for an additional 25 sampling periods (until the high Δc value is no longer used in calculating the rolling annual average Δc).

How the Benzene Action Level was Developed

EPA established the benzene action level by conducting atmospheric dispersion modeling to determine expected fenceline benzene concentrations. The dispersion modeling used the emissions inventories reported by refineries in response to the 2011 Refinery ICR, which were adjusted to represent reductions from additional control requirements prescribed in amendments to Refinery MACT CC and 40 CFR part 63 subpart UUU (together, the Refinery Sector MACT Rules) that were published on Dec. 1, 2015. Atmospheric dispersion modeling is a mathematical simulation of how air pollutants disperse in the atmosphere, which allows the modeler to evaluate what the expected concentration would be at any given geographic point. These geographic points are referred to as receptor locations. Modeling was conducted using EPA's American Meteorological Society/EPA Regulatory Model dispersion modeling system (AERMOD) to determine estimated concentrations within the sites and extending from the facility outward to a distance of 50 kilometers. This modeling indicated that based on refinery emissions sources controlled consistent with the existing and updated provisions specified in the Refinery Sector MACT Rules, the maximum post-control benzene concentration expected at the fenceline should be 9 $\mu g/m^3$ (annual average).

The refinery emissions inventories generally reflect the emissions from emission sources with required emissions controls working as designed (e.g., no tears in seals for storage vessel floating roofs, water seals in sewer drains). If a refinery's emissions inventory is correct, then the annual average Δc benzene values for the refinery should not exceed 9 $\mu g/m^3$. Because EPA's modeling approach considers only the emissions from the refinery and not the background readings from emission sources external to the refinery, this concentration is comparable to the highest modeled fenceline concentration after correcting for these background emission sources. The subtraction of the lowest monitor reading from the highest monitor reading in the calculation of Δc accounts for background readings from these emissions sources.

Site-Specific Monitoring Plans

Refineries may request approval from EPA to use a site-specific monitoring plan to account for emissions sources from the refinery source category or external to the refinery that are not regulated by the Refinery Sector MACT Rules. The site-specific monitoring plan must include identification of these emissions sources. For excluded onsite sources, the plan must include documentation that the onsite source is excluded from the Refinery Sector MACT Rules. The plan must also include the location of any additional monitoring stations that will be used to determine a uniform background concentration or concentrations contributed by the excluded emission source(s); identification of the fenceline monitoring location(s) impacted by the excluded emissions source(s); and a description of the calculations that will be used to determine the concentration contribution for each monitoring location. If more frequent monitoring or a monitoring station other than a passive diffusive tube monitoring station is proposed, the plan must provide a detailed description of the measurement methods, measurement frequency, and recording frequency for determining the uniform background or concentrations contributed by the excluded emission source(s). These plans will be made available to the public in WebFIRE.

Data Flags

EPA Methods 325A and 325B include numerous quality control checks, including laboratory blanks, field blanks, and duplicate samples. In the event there are data that are flagged, under the "Sample Results" tab of this workbook, refiners may note the flags that have been identified on laboratory data and provide explanations of what these flags mean. Data flagged for adjustment or elimination will be documented in the site's refinery quarterly data reports that are submitted electronically through CEDRI.

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For fenceline monitoring systems subject to §63.658, each owner or operator shall submit the following

The asterisk (*) next to each field indicates that the corresponding field is required.

Facility Record No. *   **(Field value will automatically generate if a value is not entered.)**
XML Tag:
e.g.: 1
e.g.: ER01
1

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information to the EPA's Compliance and Emissions Data Reporting Interface (CEDRI) on a quarterly basis.

SITE INFORMATION						
Facility Name * (§63.655(h)(8)(i))	Address * (§63.655(h)(8)(i))	Address 2	City * (§63.655(h)(8)(i))	County *	State Abbreviation * (§63.655(h)(8)(i))	Zip Code * (§63.655(h)(8)(i))
FacilityName	AddressLine1	AddressLine2	CityName	CountyName	StateName	ZIPCode
e.g.: ABC Company	e.g.: 123 Main Street	e.g.: Suite 101	e.g.: Brooklyn	e.g.: Kings	e.g.: NY	e.g.: 11221
e.g.: Exemplar Refining	e.g.: 345 Park	e.g.: Suite 100	e.g.: Houston	e.g.: Harris	e.g.: TX	e.g.: 77390
Philadelphia Energy Solutions	3144 Passyunk Avenue		Philadelphia	Philadelphia	PA	19145

	REPORTING PERIOD		ADDITIONAL INFORMATION	
Responsible Agency Facility ID (State Facility Identifier)	**Sampling Year * (§63.655(h)(8)(ii))**	**Sampling Quarter * (§63.655(h)(8)(ii))**	**Please enter any additional information.**	**Enter associated file name reference.**
StateFacID	SamplingYear	SamplingQuarter	AddInfo	AddFile
e.g.: AI 725647	e.g.: 2019	e.g.: Quarter 4		e.g.: addlinfo.zip
e.g.: TX12345	e.g.: 2018	e.g.: Quarter 1		
110000336994	2019	Quarter 3	Report generated by Fenceline Pro™, powered by Trihydro	

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Submit the beginning and ending dates for each sampling period, the biweekly concentration difference (Δc) for each sampling period, and the annual average Δc for benzene for each sampling period.

NOTE: See tab labeled "Background" for information on interpretation of the data presented below.

The asterisk (*) next to each field indicates that the corresponding field is required.

Facility Record No. * (Select from dropdown list)
XML Tag:
e.g.: 1
e.g.: ER01
e.g.: ER01
e.g.: ER01
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Sampling Period ID *	Sampling Period Start Date * (§63.655(h)(8)(iv))	Sampling Period End Date * (§63.655(h)(8)(iv))	Sampling Period Δc * ($\mu g/m^3$) (§63.655(h)(8)(iv))	Annual Average Δc * ($\mu g/m^3$) (§63.655(h)(8)(iv))	Comments
PeriodId	PeriodStartDate	PeriodEndDate	PeriodAvg	AnnualAvg	PeriodComments
e.g.: 010219	e.g.: 12/31/18	e.g.: 1/14/19	e.g.: 2	e.g.: 5	
e.g.: 2018-1	e.g.: 1/1/18	e.g.: 1/14/18	e.g.: 7.5	e.g.: 4.3	
e.g.: 2018-2	e.g.: 1/14/18	e.g.: 1/27/18	e.g.: 4.9	e.g.: 4.2	
e.g.: 2018-3	e.g.: 1/27/18	e.g.: 2/9/18	e.g.: 4.5	e.g.: 4.3	
2019-0619	6/19/19	7/3/19	46	39	
2019-0703	7/3/19	7/17/19	189	46	Gasoline Compoent roof failure led to excess emissions.
2019-0717	7/17/19	7/31/19	46	47	
2019-0731	7/31/19	8/14/19	49	49	
2019-0814	8/14/19	8/28/19	25	49	
2019-0828	8/28/19	9/11/19	13	49	
2019-0911	9/11/19	9/25/19	8.9	49	

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The asterisk (*) next to each field indicates that the corresponding field is required.

Facility Record No. * (Select from dropdown list)	Sampler Name * (§63.655(h)(8)(iiii))	Latitude of Passive Sampler in Decimal Degree (at least five decimal places) * (§63.655(h)(8)(iiii))	Longitude of Passive Sampler in Decimal Degree (at least five decimal places) * (§63.655(h)(8)(iiii))	Passive Sampler Type * (§63.655(h)(8)(iiii))	Comments
XML Tag:	SamplerName	SamplerLatitude	SamplerLongitude	SamplerType	SamplerComments
e.g.: 1	e.g.: PS1	e.g.: 34.12345	e.g.: -101.12345	e.g.: Regular Monitor	
e.g.: ER01	e.g.: ER-01	e.g.: 29.74615242	e.g.: -95.36109815	e.g.: Regular Monitor	
e.g.: ER01	e.g.: ER-03	e.g.: 29.7469659	e.g.: -95.36492524	e.g.: Duplicate	
e.g.: ER01	e.g.: ER-04	e.g.: 29.7469659	e.g.: -95.36492524	e.g.: Field Blank	
e.g.: ER01	e.g.: ER-11	e.g.: 29.75407539	e.g.: -95.35852382	e.g.: Extra Monitor	
1	1	39.91593	-75.19201	Regular Monitor	
1	1	39.91593	-75.19201	Duplicate	
1	10	39.92919	-75.19901	Regular Monitor	
1	10	39.92919	-75.19901	Field Blank	
1	11	39.91993	-75.19242	Regular Monitor	
1	11	39.91993	-75.19242	Duplicate	
1	12	39.92773	-75.21032	Regular Monitor	
1	12	39.92773	-75.21032	Field Blank	
1	13	39.90612	-75.21433	Regular Monitor	
1	13	39.90612	-75.21433	Field Blank	
1	14	39.90117	-75.21300	Regular Monitor	
1	14	39.90117	-75.21300	Duplicate	
1	16	39.90974	-75.20944	Regular Monitor	
1	16	39.90974	-75.20944	Field Blank	
1	17	39.90296	-75.20149	Regular Monitor	
1	17	39.90296	-75.20149	Duplicate	
1	18	39.91681	-75.20185	Regular Monitor	
1	18	39.91681	-75.20185	Duplicate	
1	19	0.00000	0.00000	Extra Monitor	
1	2	39.91306	-75.19268	Regular Monitor	
1	2	39.91306	-75.19268	Duplicate	
1	20	39.90984	-75.21243	Regular Monitor	
1	20	39.90984	-75.21243	Field Blank	
1	21	39.92298	-75.21074	Regular Monitor	
1	21	39.92298	-75.21074	Field Blank	
1	22	39.92212	-75.20434	Regular Monitor	
1	22	39.92212	-75.20434	Duplicate	
1	23	39.92808	-75.20958	Regular Monitor	
1	23	39.92808	-75.20958	Field Blank	
1	24	39.91010	-75.20585	Regular Monitor	
1	24	39.91010	-75.20585	Field Blank	
1	25	39.90518	-75.19618	Regular Monitor	
1	25	39.90518	-75.19618	Duplicate	
1	26	39.93015	-75.20560	Regular Monitor	
1	26	39.93015	-75.20560	Field Blank	
1	27	39.91000	-75.19346	Regular Monitor	
1	27	39.91000	-75.19346	Duplicate	
1	28	39.89540	-75.20431	Regular Monitor	

1	28	39.89540	-75.20431	Duplicate	
1	29	0.00000	0.00000	Extra Monitor	
1	31	39.91850	-75.19148	Regular Monitor	
1	31	39.91850	-75.19148	Duplicate	
1	32	39.92195	-75.20801	Regular Monitor	
1	33	39.90332	-75.21379	Regular Monitor	
1	33	39.90332	-75.21379	Field Blank	
1	33	39.90332	-75.21379	Duplicate	
1	34	39.92801	-75.19662	Regular Monitor	
1	34	39.92801	-75.19662	Field Blank	
1	35	39.92631	-75.19486	Regular Monitor	
1	35	39.92631	-75.19486	Field Blank	
1	36	39.92029	-75.19669	Regular Monitor	
1	36	39.92029	-75.19669	Field Blank	
1	37	39.92396	-75.19880	Regular Monitor	
1	4	39.91503	-75.20256	Regular Monitor	
1	4	39.91503	-75.20256	Field Blank	
1	5	39.91959	-75.20063	Regular Monitor	
1	5	39.91959	-75.20063	Duplicate	
1	6	39.89757	-75.20953	Regular Monitor	
1	6	39.89757	-75.20953	Duplicate	
1	7	39.89626	-75.20060	Regular Monitor	
1	7	39.89626	-75.20060	Duplicate	
1	8	39.89798	-75.20049	Regular Monitor	
1	8	39.89798	-75.20049	Duplicate	

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Template Version	v1.00
Last Updated Date	03/19/19

40 CFR Part 63 - National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries - §63.655(h)(8) Fenceline Monitoring Report Spreadsheet Template

Report: (v) Individual sample results for benzene reported for each monitor for each sampling period that ends during the reporting period. Results below the method detection limit shall be flagged as below the detection limit and reported at the method detection limit. (vi) Data flags that indicate each monitor that was skipped for the sampling period, if the owner or operator uses an alternative sampling frequency under §63.658(e)(3). (vii) Data flags for each outlier determined in accordance with Section 9.2 of Method 325A of appendix A of this part. For each outlier, the owner or operator must submit the individual sample result of the outlier, as well as the evidence used to conclude that the result is an outlier.
The asterisk (*) next to each field indicates that the corresponding field is required.

Facility Record No. *	Sampling Period ID * (Select from dropdown list)	Sampler Name *	Passive Sampler Type	Sampling Period Benzene Concentration (µg/m³) * (§63.655(h)(8)(v))	Corrected Sampling Period Benzene Concentration (e.g., if required by site-specific monitoring plan) (µg/m³)	Below method detection limit (BDL)? * (§63.655(h)(8)(v))	Lab Reported Benzene Concentration for BDL Sample (µg/m³)	Outlier? * (If yes, attach evidence in Additional Information on Facility Information tab.) (§63.655(h)(8)(vii))	Skipped due to §63.658(e)(3)? * (§63.655(h)(8)(vi))	Other Data Flag(s)	Explanation
XML Tag:	PeriodId	SamplerName	SamplerType	BenzeneAmt	CorrectedBenzeneAmt	BdlFlag	BdlAmt	OutlierFlag	SkippedFlag	OtherData	ResultsComments
e.g.: 1	e.g.: 010219	e.g.: PS1	e.g.: Regular Monitor	e.g.: 0.52		e.g.: no		e.g.: no	e.g.: no	e.g.: E	e.g.: Exceeded calibration range
e.g.: ER01	e.g.: 2018-1	e.g.: ER-01	e.g.: Regular Monitor	e.g.: 0.140		e.g.: yes	e.g.: 0.112	e.g.: no	e.g.: no		e.g.: Method detection limit is 0.140, but lab reported concentration is 0.112.
e.g.: ER01	e.g.: 2018-1	e.g.: ER-03	e.g.: Duplicate	e.g.: 12.0	e.g.: 4.00	e.g.: no		e.g.: no	e.g.: no	e.g.: X	e.g.: Adjusted for Offsite Contributor per Site Specific Plan
e.g.: ER01	e.g.: 2018-2	e.g.: ER-01	e.g.: Regular Monitor	e.g.: 0.258		e.g.: no		e.g.: no	e.g.: no	e.g.: J	e.g.: Estimated value between MDL and
e.g.: ER01	e.g.: 2018-2	e.g.: ER-03	e.g.: Duplicate	e.g.: 22.0	e.g.: 0.00	e.g.: no		e.g.: no	e.g.: no	e.g.: Fe	e.g.: Discarded due to tube found missing diffusion at retrieval
e.g.: ER01	e.g.: 2018-3	e.g.: ER-01	e.g.: Regular Monitor	e.g.: 2.00		e.g.: no		e.g.: no	e.g.: no		
1	2019-0619	1	Regular Monitor	7.1		no		no	no		
1	2019-0619	10	Regular Monitor	0.84		no		no	no		
1	2019-0619	11	Regular Monitor	2.2		no		no	no		
1	2019-0619	12	Regular Monitor	0.65		no		no	no		
1	2019-0619	13	Regular Monitor	4.4		no		no	no		
1	2019-0619	14	Regular Monitor	32		no		no	no		
1	2019-0619	16	Regular Monitor	2.8		no		no	no		
1	2019-0619	17	Regular Monitor	3.2		no		no	no		
1	2019-0619	17	Duplicate	2.8		no		no	no		
1	2019-0619	18	Regular Monitor	1.7		no		no	no		
1	2019-0619	2	Regular Monitor	3.5		no		no	no		
1	2019-0619	2	Duplicate	3.4		no		no	no		
1	2019-0619	20	Regular Monitor	3.9		no		no	no		
1	2019-0619	21	Regular Monitor	0.98		no		no	no		
1	2019-0619	22	Regular Monitor	0.93		no		no	no		
1	2019-0619	22	Duplicate	1.2		no		no	no		
1	2019-0619	23	Regular Monitor	0.75		no		no	no		
1	2019-0619	24	Regular Monitor	3.5		no		no	no		
1	2019-0619	25	Regular Monitor	3.4		no		no	no		
1	2019-0619	26	Regular Monitor	0.81		no		no	no		
1	2019-0619	27	Regular Monitor	3.1		no		no	no		
1	2019-0619	28	Regular Monitor	5.2		no		no	no		
1	2019-0619	31	Regular Monitor	3.2		no		no	no		
1	2019-0619	32	Regular Monitor	1.2		no		no	no		
1	2019-0619	33	Regular Monitor	47		no		no	no		
1	2019-0619	33	Field Blank	0.18		yes		no	no	ND	
1	2019-0619	34	Regular Monitor	0.67		no		no	no		
1	2019-0619	35	Regular Monitor	0.73		no		no	no		
1	2019-0619	35	Field Blank	0.18		yes		no	no	ND	
1	2019-0619	36	Regular Monitor	1.4		no		no	no		
1	2019-0619	37	Regular Monitor	0.91		no		no	no		
1	2019-0619	4	Regular Monitor	1.6		no		no	no		
1	2019-0619	5	Regular Monitor	2.1		no		no	no		
1	2019-0619	6	Regular Monitor	4.3		no		no	no		
1	2019-0619	7	Regular Monitor	16		no		no	no		
1	2019-0619	8	Regular Monitor	9.6		no		no	no		
1	2019-0703	1	Regular Monitor	190		no		no	no	E	Exceeds instrument calibration range
1	2019-0703	10	Regular Monitor	1.5		no		no	no		
1	2019-0703	11	Regular Monitor	28		no		no	no		
1	2019-0703	12	Regular Monitor	0.98		no		no	no	B	Compound present in field blank(s) greater than 1/2 limit or measured target analyte (background subtraction performed).
1	2019-0703	13	Regular Monitor	3.8		no		no	no		
1	2019-0703	13	Field Blank	0.39		no		no	no		
1	2019-0703	14	Regular Monitor	34		no		no	no		
1	2019-0703	16	Regular Monitor	8.4		no		no	no		
1	2019-0703	17	Regular Monitor	5.1		no		no	no		
1	2019-0703	18	Regular Monitor	3.3		no		no	no		
1	2019-0703	2	Regular Monitor	71		no		no	no		
1	2019-0703	20	Regular Monitor	8.6		no		no	no		
1	2019-0703	21	Regular Monitor	1.3		no		no	no		
1	2019-0703	22	Regular Monitor	1.5		no		no	no		
1	2019-0703	23	Regular Monitor	1		no		no	no	B	Compound present in field blank(s) greater than 1/2 limit or measured target analyte (background subtraction performed).
1	2019-0703	24	Regular Monitor	4.9		no		no	no		
1	2019-0703	25	Regular Monitor	12		no		no	no		
1	2019-0703	26	Regular Monitor	1.2		no		no	no		

1	2019-0703	27	Regular Monitor	27		no		no	no		
1	2019-0703	27	Duplicate	28		no		no	no		
1	2019-0703	28	Regular Monitor	7.5		no		no	no		
1	2019-0703	31	Regular Monitor	31		no		no	no		
1	2019-0703	32	Regular Monitor	1.5		no		no	no		
1	2019-0703	33	Regular Monitor	78		no		no	no		
1	2019-0703	34	Regular Monitor	2.1		no		no	no		
1	2019-0703	34	Field Blank	0.18		no		no	no	U	Compound analyzed for but not detected above
1	2019-0703	35	Regular Monitor	3.5		no		no	no		
1	2019-0703	36	Regular Monitor	6.1		no		no	no		
1	2019-0703	37	Regular Monitor	2.3		no		no	no		
1	2019-0703	4	Regular Monitor	3.6		no		no	no		
1	2019-0703	5	Regular Monitor	2.9		no		no	no		
1	2019-0703	5	Duplicate	2.9		no		no	no		
1	2019-0703	6	Regular Monitor	3		no		no	no		
1	2019-0703	7	Regular Monitor	11		no		no	no		
1	2019-0703	8	Regular Monitor	14		no		no	no		
1	2019-0703	8	Duplicate	14		no		no	no		
1	2019-0717	1	Regular Monitor	16		no		no	no		
1	2019-0717	10	Regular Monitor	1.6		no		no	no		
1	2019-0717	10	Field Blank	0.18		no		no	no	U	Compound analyzed for but not detected above
1	2019-0717	11	Regular Monitor	34		no		no	no		
1	2019-0717	12	Regular Monitor	1.2		no		no	no		
1	2019-0717	13	Regular Monitor	4.1		no		no	no		
1	2019-0717	14	Regular Monitor	37		no		no	no		
1	2019-0717	16	Regular Monitor	5.8		no		no	no		
1	2019-0717	17	Regular Monitor	3		no		no	no		
1	2019-0717	18	Regular Monitor	2.4		no		no	no		
1	2019-0717	18	Duplicate	2.2		no		no	no		
1	2019-0717	2	Regular Monitor	4.8		no		no	no		
1	2019-0717	20	Regular Monitor	5.8		no		no	no		
1	2019-0717	20	Field Blank	0.18		no		no	no	U	Compound analyzed for but not detected above
1	2019-0717	21	Regular Monitor	1.5		no		no	no		
1	2019-0717	22	Regular Monitor	1.6		no		no	no		
1	2019-0717	23	Regular Monitor	1.3		no		no	no		
1	2019-0717	24	Regular Monitor	5.7		no		no	no		
1	2019-0717	25	Regular Monitor	3.2		no		no	no		
1	2019-0717	25	Duplicate	3.3		no		no	no		
1	2019-0717	26	Regular Monitor	1.3		no		no	no		
1	2019-0717	27	Regular Monitor	3.3		no		no	no		
1	2019-0717	28	Regular Monitor	5.9		no		no	no		
1	2019-0717	31	Regular Monitor	36		no		no	no		
1	2019-0717	32	Regular Monitor	1.9		no		no	no		
1	2019-0717	33	Regular Monitor	47		no		no	no		
1	2019-0717	34	Regular Monitor	1.6		no		no	no		
1	2019-0717	35	Regular Monitor	1.6		no		no	no		
1	2019-0717	36	Regular Monitor	3.2		no		no	no		
1	2019-0717	37	Regular Monitor	2.7		no		no	no		
1	2019-0717	4	Regular Monitor	2.6		no		no	no		
1	2019-0717	5	Regular Monitor	2.1		no		no	no		
1	2019-0717	6	Regular Monitor	2.2		no		no	no		
1	2019-0717	7	Regular Monitor	12		no		no	no		
1	2019-0717	7	Duplicate	13		no		no	no		
1	2019-0717	8	Regular Monitor	16		no		no	no		
1	2019-0731	1	Regular Monitor	6.6		no		no	no		
1	2019-0731	10	Regular Monitor	1.4		no		no	no		
1	2019-0731	11	Regular Monitor	3.1		no		no	no		
1	2019-0731	11	Duplicate	3.3		no		no	no		
1	2019-0731	12	Regular Monitor	0.98		no		no	no		
1	2019-0731	13	Regular Monitor	4.1		no		no	no		
1	2019-0731	14	Regular Monitor	50		no		no	no		
1	2019-0731	16	Regular Monitor	5.2		no		no	no		
1	2019-0731	16	Field Blank	0.25		no		no	no	J	J = Estimated value.
1	2019-0731	17	Regular Monitor	3.2		no		no	no		
1	2019-0731	17	Duplicate	3.7		no		no	no		
1	2019-0731	18	Regular Monitor	2.6		no		no	no		
1	2019-0731	2	Regular Monitor	5.4		no		no	no		
1	2019-0731	20	Regular Monitor	3.5		no		no	no		
1	2019-0731	21	Regular Monitor	1.2		no		no	no		
1	2019-0731	22	Regular Monitor	1.3		no		no	no		
1	2019-0731	23	Regular Monitor	1		no		no	no		
1	2019-0731	24	Regular Monitor	3		no		no	no		
1	2019-0731	25	Regular Monitor	2.9		no		no	no		
1	2019-0731	26	Regular Monitor	1.2		no		no	no		
1	2019-0731	26	Field Blank	0.18		no		no	no	U	Compound analyzed for but not detected above
1	2019-0731	27	Regular Monitor	3.3		no		no	no		
1	2019-0731	28	Regular Monitor	6.8		no		no	no		
1	2019-0731	28	Duplicate	6.4		no		no	no		
1	2019-0731	31	Regular Monitor	3.8		no		no	no		
1	2019-0731	32	Regular Monitor	1.2		no		no	no		
1	2019-0731	33	Regular Monitor	24		no		no	no		
1	2019-0731	34	Regular Monitor	1.4		no		no	no		
1	2019-0731	35	Regular Monitor	1.6		no		no	no		
1	2019-0731	36	Regular Monitor	3.1		no		no	no		
1	2019-0731	37	Regular Monitor	1.7		no		no	no		
1	2019-0731	4	Regular Monitor	2.3		no		no	no		
1	2019-0731	5	Regular Monitor	2.2		no		no	no		
1	2019-0731	6	Regular Monitor	2.4		no		no	no		
1	2019-0731	7	Regular Monitor	15		no		no	no		
1	2019-0731	8	Regular Monitor	9.9		no		no	no		
1	2019-0814	1	Regular Monitor	4.1		no		no	no		

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	Date	No.	Monitor Type	Value					Flag	Comment
1	2019-0814	10	Regular Monitor	1		no		no	no		
1	2019-0814	11	Regular Monitor	2.3		no		no	no		
1	2019-0814	12	Regular Monitor	0.92		no		no	no		
1	2019-0814	13	Regular Monitor	2.4		no		no	no		
1	2019-0814	14	Regular Monitor	26		no		no	no		
1	2019-0814	16	Regular Monitor	3.8		no		no	no		
1	2019-0814	17	Regular Monitor	2.8		no		no	no		
1	2019-0814	18	Regular Monitor	2.5		no		no	no		
1	2019-0814	2	Regular Monitor	3		no		no	no		
1	2019-0814	20	Regular Monitor	2		no		no	no		
1	2019-0814	21	Regular Monitor	1.2		no		no	no		
1	2019-0814	22	Regular Monitor	1.2		no		no	no		
1	2019-0814	23	Regular Monitor	1		no		no	no		
1	2019-0814	23	Field Blank	0.18		no		no	no	U	Compound analyzed for but not detected above
1	2019-0814	24	Regular Monitor	4.3		no		no	no		
1	2019-0814	24	Field Blank	0.18		no		no	no	U	Compound analyzed for but not detected above
1	2019-0814	25	Regular Monitor	2.2		no		no	no		
1	2019-0814	26	Regular Monitor	1.3		no		no	no		
1	2019-0814	27	Regular Monitor	4.1		no		no	no		
1	2019-0814	28	Regular Monitor	14		no		no	no		
1	2019-0814	31	Regular Monitor	2.7		no		no	no		
1	2019-0814	31	Duplicate	2.6		no		no	no		
1	2019-0814	32	Regular Monitor	1.3		no		no	no		
1	2019-0814	33	Regular Monitor	9.8		no		no	no		
1	2019-0814	34	Regular Monitor	1		no		no	no		
1	2019-0814	35	Regular Monitor	1.2		no		no	no		
1	2019-0814	36	Regular Monitor	1.5		no		no	no		
1	2019-0814	37	Regular Monitor	1.3		no		no	no		
1	2019-0814	4	Regular Monitor	2.2		no		no	no		
1	2019-0814	5	Regular Monitor	1.5		no		no	no		
1	2019-0814	6	Regular Monitor	3.7		no		no	no		
1	2019-0814	6	Duplicate	3.6		no		no	no		
1	2019-0814	7	Regular Monitor	14		no		no	no		
1	2019-0814	8	Regular Monitor	7.4		no		no	no		
1	2019-0814	8	Duplicate	7.3		no		no	no		
1	2019-0828	1	Regular Monitor	4.4		no		no	no		
1	2019-0828	1	Duplicate	4.1		no		no	no		
1	2019-0828	10	Regular Monitor	0.73		no		no	no		
1	2019-0828	11	Regular Monitor	2.3		no		no	no		
1	2019-0828	12	Regular Monitor	0.64		no		no	no		
1	2019-0828	12	Field Blank	0.18		no		no	no	U	Compound analyzed for but not detected above
1	2019-0828	13	Regular Monitor	1.6		no		no	no		
1	2019-0828	14	Regular Monitor	8.5		no		no	no		
1	2019-0828	14	Duplicate	8.5		no		no	no		
1	2019-0828	16	Regular Monitor	2.3		no		no	no		
1	2019-0828	17	Regular Monitor	2.3		no		no	no		
1	2019-0828	18	Regular Monitor	1.5		no		no	no		
1	2019-0828	2	Regular Monitor	2.7		no		no	no		
1	2019-0828	20	Regular Monitor	1.8		no		no	no		
1	2019-0828	21	Regular Monitor	0.76		no		no	no		
1	2019-0828	22	Regular Monitor	0.78		no		no	no		
1	2019-0828	23	Regular Monitor	0.62		no		no	no		
1	2019-0828	24	Regular Monitor	1.8		no		no	no		
1	2019-0828	25	Regular Monitor	2.1		no		no	no		
1	2019-0828	26	Regular Monitor	0.87		no		no	no		
1	2019-0828	27	Regular Monitor	3.2		no		no	no		
1	2019-0828	28	Regular Monitor	5.1		no		no	no		
1	2019-0828	31	Regular Monitor	2.6		no		no	no		
1	2019-0828	32	Regular Monitor	0.89		no		no	no		
1	2019-0828	33	Regular Monitor	4.9		no		no	no		
1	2019-0828	34	Regular Monitor	0.7		no		no	no		
1	2019-0828	35	Regular Monitor	0.78		no		no	no		
1	2019-0828	36	Regular Monitor	0.18		no		no	no	U	Compound analyzed for but not detected above
1	2019-0828	37	Regular Monitor	0.81		no		no	no		
1	2019-0828	4	Regular Monitor	1.4		no		no	no		
1	2019-0828	4	Field Blank	1.3		no		no	no		
1	2019-0828	5	Regular Monitor	1		no		no	no		
1	2019-0828	6	Regular Monitor	1.8		no		no	no		
1	2019-0828	7	Regular Monitor	13		no		no	no		
1	2019-0828	7	Duplicate	12		no		no	no		
1	2019-0828	8	Regular Monitor	7.1		no		no	no		
1	2019-0911	1	Regular Monitor	4.7		no		no	no		
1	2019-0911	10	Regular Monitor	0.82		no		no	no		
1	2019-0911	11	Regular Monitor	2.6		no		no	no		
1	2019-0911	12	Regular Monitor	0.74		no		no	no		
1	2019-0911	13	Regular Monitor	1.4		no		no	no		
1	2019-0911	14	Regular Monitor	4.3		no		no	no		
1	2019-0911	16	Regular Monitor	2.1		no		no	no		
1	2019-0911	17	Regular Monitor	2.5		no		no	no		
1	2019-0911	18	Regular Monitor	1.6		no		no	no		
1	2019-0911	19	Extra Monitor	21		no		no	no		
1	2019-0911	2	Regular Monitor	3.0		no		no	no		
1	2019-0911	2	Duplicate	3.0		no		no	no		
1	2019-0911	20	Regular Monitor	2.1		no		no	no		
1	2019-0911	21	Regular Monitor	0.91		no		no	no		
1	2019-0911	21	Field Blank	0.19		no		no	no	U	Compound analyzed for but not detected above
1	2019-0911	22	Regular Monitor	0.90		no		no	no		
1	2019-0911	23	Regular Monitor	0.85		no		no	no		
1	2019-0911	24	Regular Monitor	2.4		no		no	no		
1	2019-0911	25	Regular Monitor	2.2		no		no	no		
1	2019-0911	26	Regular Monitor	0.97		no		no	no		

	1	2019-0911	27	Regular Monitor	3.9		no		no	no	
	1	2019-0911	28	Regular Monitor	6.1		no		no	no	
	1	2019-0911	28	Duplicate	6.2		no		no	no	
	1	2019-0911	29	Extra Monitor	4.1		no		no	no	
	1	2019-0911	31	Regular Monitor	2.6		no		no	no	
	1	2019-0911	32	Regular Monitor	1.0		no		no	no	
	1	2019-0911	33	Regular Monitor	3.2		no		no	no	
	1	2019-0911	33	Duplicate	3.2		no		no	no	
	1	2019-0911	34	Regular Monitor	0.85		no		no	no	
	1	2019-0911	35	Regular Monitor	0.89		no		no	no	
	1	2019-0911	36	Regular Monitor	1.3		no		no	no	
	1	2019-0911	36	Field Blank	0.19		no		no	no	U	Compound analyzed for but not detected above
	1	2019-0911	37	Regular Monitor	0.90		no		no	no	
	1	2019-0911	4	Regular Monitor	1.9		no		no	no	
	1	2019-0911	5	Regular Monitor	1.0		no		no	no	
	1	2019-0911	6	Regular Monitor	1.2		no		no	no	
	1	2019-0911	7	Regular Monitor	8.4		no		no	no	
	1	2019-0911	8	Regular Monitor	9.6		no		no	no	

Sample Results